# MIDDLE SCHOOL
# EDUCATIONAL SPECIFICATIONS

## FACILITIES PLANNING STANDARDS



# EXAMPLE

**February, 2008**

## STATE OF WYOMING
## SCHOOL FACILITIES COMMISSION

# INDEX

# INTRODUCTION

This Middle School Educational Specification is a guideline to be used in planning and designing new and remodeling and renovating existing middle schools. This Educational Specification describes the facility requirements to accommodate the instructional program, activities and support facilities. This document is a tool that is used to communicate basic facility design requirements and guidelines to architects, school districts, school staff and the School Facilities Commission.

Educational Specifications are guidelines that are critical to the development of an overall plan as they are applied to each individual school. Site adaptation and specific program requirements for each school district may be needed for each project.

These Educational Specifications are intended to be a dynamic document that allows for amendment as required to accommodate educational program changes. They should be reviewed and updated periodically by the School Facilities Commission.

This Educational Specification is intended to be used as a supporting document to other documents issued by the School Facilities Commission. It is not intended to supersede any other School Facilities Commission documents.

The Square Feet Summary in each section of these educational specifications shall be adjusted to the size of the facility as indicated in the Appendix: MS Gross Square Feet per Student.

# ADMINISTRATION

## SPACE DESCRIPTION:

The administrative area provides space for personnel concerned with the day to day operation of the school.

**A. Administration Spaces:**

1. Principal
2. Vice Principal
3. Secretary
4. Reception
5. Nurse/Toilet
6. Counselor
7. Conference
8. Workroom
9. Staff Lounge
10. Staff Toilet
11. Itinerant Office
12. Technology Support
13. Storage/Records

## DESIGN CRITERIA:

Provide daylighting in all offices, work areas and lounge with a minimum of 20-30 fc of uniform daylighting throughout all spaces. Ceiling height in the Administration area shall be a minimum of 9'-4". All areas shall be ADA compliant.

**A. Administration Spaces:**

**1. Principal:**

a. Provide general office space with guest seating for 6 people.
b. Provide a door into the general office.
c. The main school entrance should be visible from the principal's office.
d. Provide a small locking closet or wardrobe unit.

**2. Vice Principal:**

a. Provide general office space with guest seating for 4 people.
b. Provide a door into the general office and, if possible, one directly into the corridor.
c. Provide a small locking closet or wardrobe unit.

**3. Secretary:**

a. This is a general office area. Provide for 3 desk/computer workstations and 6 filing cabinets. The area needs to be open and flexible.
b. Provide good visibility to the corridor, principal's office and the main entrance. This area should also be near the administrative workroom.
c. Wall space is required for the school fire/security alarm panel.
d. Attendance functions also take place in this area. Provide an outside transaction window where students can wait in line from the corridor to use it.

4. **Reception:**
    a. The reception area handles contact with the public, faculty and students. Locate the area near or adjacent to the main building entrance. This area is a buffer between external and instructional functions. There is also a direct relationship to core instructional and non-instructional facilities, particularly those with after-hours community use.
    b. This area shall have a waiting area that will comfortably hold _____ seated parents/ adults and _____ students standing.
    c. A front counter shall be provided; the layout should accommodate an aisle between the counter and the Secretary area. Provide good visibility to the nurse, principal's office and outside to the entry/parking area. Visibility of the main lobby is necessary.
5. **Nurse/Toilet:**
    a. This area should be easily viewed from the secretary area. Doors should be provided from both the main corridor and the office area.
    b. Provide a desk space to accommodate a nurse's aide and two beds with screening curtains on ceiling mounted tracks.
    c. Provide locking upper and lower cabinets for medical supplies and a sink with a gooseneck faucet and blade handles with both a hot and cold water supply and a bubblier. Provide space for an under-counter refrigerator.
    d. Provide a handicapped accessible toilet room with an out-swinging door. Provide a hand held shower mounted 48 inches above the floor with a single lever faucet on the wall behind the water closet and a floor drain.
6. **Counselor:**
    a. Offices for two counselors.
    b. Provide desk space in each office and seating area for up to four people.
7. **Conference:**
    a. Provide seating for 10 people.
    b. Locate near principal's office with access for nurse and counselors.
    c. Provide 6 feet of base cabinet with countertop.
8. **Workroom:**
    a. Staff, faculty, aides and volunteers use the room.
    b. The workroom should be located next to the secretary office area. More than one door into the room is desirable due to heavy use of the room.
    c. Provide a sink with a hot and cold water supply and approximately 24 lineal feet of upper and lower cabinets for storage of supplies.
    d. Provide floor area and receptacles for a large 208V copier requiring about 4 feet x 7 feet of floor space, printers, a fax machine and other specialized equipment. Provide supplemental ventilation to dissipate equipment heat loads.
    e. Provide a closet with rod and shelf for use by administrative staff.
    f. Mailboxes for staff use only should be located adjacent to the workroom. Provide a pigeonhole mailbox with 54 slots 15-inches deep x 11-inches wide x 3-inches high. A tack surface for messages is required and may be located in the workroom.
9. **Staff Lounge:**
    a. The lounge provides staff break, lunch and meeting space.

b. The lounge should be accessible but not necessarily contiguous to other administrative areas.
c. Exterior windows are preferred.
d. Provide two 4-foot x 4-foot tack boards.
e. Provide 12 lineal feet of base and wall cabinets. One wall cabinet must be lockable.
f. Provide a single stainless steel kitchen sink with hot and cold water, a gooseneck faucet and a garbage disposal.
g. Provide space and utilities for a dishwasher, microwave and full size refrigerator.

**10. Staff Toilet:**

a. Provide two single occupant handicapped accessible toilet rooms.

**11. Itinerant Office:**

a. Provide two general offices each with seating for two guests.

**12. Technology Support:**

a. Provide one general office with seating for two guests.

**13. Storage/Records:**

a. Provide a lockable room central to the administrative area.
b. Provide floor to ceiling 12 inch deep adjustable shelves along one wall.
c. Provide room for 10 to 15 filing cabinets.

## SQUARE FEET SUMMARY:

### A. Administration Spaces:

| | |
|---|---|
| 1. Principal | _____ sf |
| 2. Vice Principal | _____ |
| 3. Secretary | _____ |
| 4. Reception | _____ |
| 5. Nurse/Toilet | _____ |
| 6. Counselor | _____ |
| 7. Conference | _____ |
| 8. Workroom | _____ |
| 9. Staff Lounge | _____ |
| 10. Staff Toilet | _____ |
| 11. Itinerant Office | _____ |
| 12. Technology Support | _____ |
| 13. Storage/Records | _____ |
| **Administration Spaces Total** | **_____ SF** |

# INSTRUCTIONAL SUITE

## SPACE DESCRIPTION:

The use of instructional suites allows teams of teachers and students to work together to achieve academic and personal goals for students. The design of instructional suites enhances those goals by creating smaller, more personalized learning environments.

The design should facilitate easy flow of students from one instructional area to another. The arrangement of the suite should permit casual monitoring of students by teachers.

**A. Instructional Suite Spaces:**

1. Three General Purpose Classrooms per suite
2. One Special Education Classroom per suite
3. One Science Laboratory per suite
4. One Science Preparation Room per suite
5. One Science Storage Room per suite
6. One Resource/Small Group Workroom per suite
7. One Teacher Planning/Conference Room per suite
8. One General Storage Room per suite
9. Girls and Boys Toilets
10. Staff Toilet
11. Custodial Closet

## DESIGN CRITERIA:

Provide daylighting in all academic rooms, work rooms and conference rooms with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

**A. Instructional Suite Spaces:**

Minimum ceiling height shall be 10'-0" in all classrooms and laboratories and 9'-4" in other smaller spaces.

**1. General Purpose Classrooms:**

a. Provide flexible, easily modified space to accommodate individual student needs for experiential and active learning, varied instructional techniques, and small work groups, as well as for large group instruction.

b. For flexibility of teaching, operable partitions are recommended between two of the general purpose classrooms. Consideration should be given to the control of sound transmission through the ceiling space above operable partitions.

c. Every classroom should have at least one outside view window that has an operable section. Minimum sill height shall be 32 inches above the floor. View windows shall have blinds and screens.

d. If sidelights are used next to classroom doors, sill heights should be not less than 18 inches above the floor. For building security purposes, doors to the exterior from general classrooms are discouraged except where program requirements recommend a door or the building code occupancy requirements require a door.

e. Casework should consist of 16 to 20 lineal feet of base and upper storage cabinets. Provide one 23 inch deep x 12 inch wide x 84 inch high locking wardrobe cabinet for teacher coats and personal items. Sinks are not required for general purpose classrooms.

f. Provide white boards with marker rails and tack boards.

**2. Special Education Classroom:**

a. Special education programs provide instruction for students with special needs and moderate to severe handicaps. Students may spend part of their instructional day in the general classrooms and part in the special education classroom.

b. The class size is generally smaller than general classrooms and with instruction provided at tables or desks for individuals or small groups.

c. Programs in special education vary greatly and the spaces should be designed to meet the specific needs of the individual program.

**3. Science Laboratory:**

a. Science programs are generally laboratory based inquiry programs with instruction in life science and physical science.

b. Provide two-person student work tables 24 inches deep x 48 inches wide with acid resistant tops. These tables should be moveable to be used as desks in the center of the space or locked to side cabinets for lab work.

c. Provide locking base cabinets with water resistant tops along two walls.

d. Space above cabinets should contain tack boards, open bookshelves and locking glass door wall cabinets.

e. Window locations should maximize daylighting and allow adequate sun light for plant growth on top of base cabinets.

f. Provide a locking microscope cabinet for storage of 20 microscopes.

g. Provide one 10 pound dry chemical fire extinguisher. The extinguisher should be located not more than 25 feet from any point in the room if possible, but in no case more than 50 feet.

h. Provide one centrally located hands-free eye wash station and emergency deluge shower with drain, not more than 25 feet from any point in the room if possible, but in no case more than 40 feet.

i. Provide wall space for a first aid kit.

j. Provide wall space or cabinet space for goggles.

k. Provide paper towel and soap dispensers.

l. Provide the following utilities:

1. Four sinks with gooseneck faucets, blade handles and hot and cold water. Inside sink dimensions should be 28 inches long x 16 inches wide x 7 inches deep.
2. Continuous electrical plug mold above all counter tops.
3. Locate master control electrical switch in the science reparation room with quick disconnect stations in the science laboratory.
4. Provide gas jets for each six lineal feet of counter space with a separate, key-locking master gas control in the science preparation room. Locate jets as close to the counter backsplash as possible to maximize available space. Gas service is not required at student work tables.

m. Locks for doors to science laboratories, preparation rooms and science storage rooms should allow for one common keyway for all.

n. The laboratory design should allow student tables to be oriented toward a teaching station with good visual access to a projection screen and/or whiteboard.

o. Provide floor area for a moveable demonstration table. Electrical and plumbing is not required.

**4. Science Preparation Room:**

a. A combination preparation/workroom area should be located adjacent to each science laboratory. If two science laboratories are adjacent to one another, one large preparation/workroom may be shared.

b. Provide a large window for visual supervision of the laboratory.

c. Locate master electrical and gas controls for the laboratory in the preparation room.

d. Provide base cabinets with water and acid resistant counter tops and continuous plug mold above.

e. Provide one gas jet near backsplash on base cabinet.

f. Provide one sink with gooseneck faucet and hot and cold water. The sink size should be 28 inches long x 16 inches wide x 78 inches deep.

g. Provide one mechanically vented fume hood for mixing chemicals.

h. Provide a 16-18 cubic foot upright ice making refrigerator and full size dishwasher.

i. Door hardware should be self-locking and self-closing.

j. Provide a floor drain.

**5. Science Storage Room:**

a. The storage room should be located off the science preparation room. If two science laboratories are adjacent to one another, one enlarged storage room may be located between them.

b. Provide 100 lineal feet of full height adjustable shelving divided equally between 18 inches deep and 24 inches deep. One third of shelving should be within locking cabinets.

c. Provide one 10 pound dry chemical fire extinguisher beside the room exit door.

d. Provide floor drain.

e. Provide one fire resistant storage cabinet with flame arrestor with dimensions of 36 inches wide x 24 inches deep x 36 inches high.

f. Provide one non-corroding acid cabinet with dimensions of 36 inches side x 18 inches deep x 36 inches high to store acids below eye level.

g. Door hardware should be self-locking and self-closing.

**6. Resource/Small Group Workroom:**

a. The room is used for small group instruction/study, project work area, individual instruction and study, testing and conferences. Furnishings will be tables and chairs.

b. Provide visual access for classroom supervision.

c. Provide, along one wall, work counter with locking base cabinets with electrical receptacle above.

d. Provide power and data outlets for computer workstations.

**7. Teacher Planning/Conference Room:**

a. The room will provide meeting/conference space to teachers, parents and students and work space for teachers in the instructional suite. Meeting space for 8 people is required.

b. Provide counter space with locking base and upper cabinets along one wall.

c. Provide coat hanging space.

d. Provide windows with blinds for visual supervision of classrooms within the suite.

e. Provide space for up to _____ students in time-out status at tables or carrels. Locate time-out space near the window to classrooms for ease of supervision.

**8. General Storage Room:**

a. The room provides storage for classroom book sets, resource books, instructional materials and A/V equipment on carts.

b. The room configuration should allow for maximum utilization of the space and easy access for teachers.

c. Provide full height heavy duty adjustable 12 inch deep shelving on at least two walls.

**9. Girls and Boys Toilets:**

a. ADA compliant toilets with the size and number of fixtures depending upon the number of classrooms per suite.

**10. Staff Toilet:**

a. Provide a unisex single adult toilet that is ADA compliant. Locate adjacent to the teacher planning/conference space.

b. Provide door hardware that contains an "Occupied" sign when the door is locked.

**11. Custodial Closet:**

a. The closet shall be used for suite maintenance equipment, supplies and storage.

## SQUARE FEET SUMMARY:

| **A. Instructional Suite Spaces:** | **per room sf** | **per suite sf** |
|---|---|---|
| 1. Five General Purpose Classrooms | _____ | _____ |
| 2. One Special Education Classroom | _____ | _____ |
| 3. One Science Laboratory | _____ | _____ |
| 4. One Science Preparation Room | _____ | _____ |
| 5. One Science Storage Room | _____ | _____ |
| 6. One Resource/Small Group Workroom | _____ | _____ |
| 7. One Teacher Planning/Conference Room | _____ | _____ |
| 8. One General Storage Room | _____ | _____ |
| 9. Girls and Boys Toilets (incl. in gross sf) | | |
| 10. Staff Toilet (incl. in gross sf) | | |
| 11. Custodial Closet (incl. in gross sf) | | |
| **Instructional Suite Spaces Total** | | **_____ SF** |
| ___ Instructional Suites X ___ sf/suite | | **_____ SF** |

# ART EDUCATION

## SPACE DESCRIPTION:

The art education area is a combined studio, workroom, kiln/clay storage room and material storage room. The room is sometimes messy, dirty, and noisy and should be designed to fit the function. Art activities include drawing, painting, crafts, clay, sculpture, plaster, jewelry making, art appreciation, art history and display.

Students engage in independent reading and research in the resource area.

**A. Art Education Spaces:**

1. Studio Area
2. Teacher Work/Planning Area
3. Resource Area
4. Kiln/Clay Storage
5. Material Storage
6. Exterior Art Area

## DESIGN CRITERIA:

Provide daylighting in all areas, except storage rooms, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All ares shall be ADA compliant.

**A. Art Education Spaces:**

**1. Studio:**

**a. General Studio Requirements:**

1. North light is recommended. At least one operable window sash is required. Sill heights should not be lower than 36 inches above the floor. Ceiling height shall be a minimum of 10'-0".

2. Ventilation systems must safely accommodate the use of art materials, chemical techniques and resulting fumes. Other systems may be required for specific equipment.

3. Provide an adequate quantity and type of ground-fault receptacles to support studio activities. All fourplex receptacles should be on dedicated 20 amp circuits. Locate data outlets nearby. Plug-mold should be provided over the countertop of all base cabinets. Removable safety net electrical drop-cords are required over student work tables and pottery wheels. Floor receptacles are prohibited.

4. Provide one double compartment stainless steel sink for every sixteen students. Sink dimensions are 84 inches long x 24 inches wide with 12 inch high back splash with basins that are 24 inches long x 21 inches wide x 12 inches deep with two 24 inch square drain boards. Sinks shall be a clay trap, single long blade lever handle and swing-spout faucet with tamper proof aerator and hot and cold water.

5. Provide a ceiling suspended "Unistrut" type grid system approximately 20 feet x 20 feet with track lighting and electrical receptacles for display use. Provide 12 track lights for color

correct flood lamps. A minimum of 50 foot candles, maintained at the work surface, of color correct lighting is required for general lighting. Locate the general lighting room switch near the corridor door. Track lighting should be independently switched.

6. Provide display area with an 8 foot length of track lighting and 3 track lights for highlighting still life displays, models and at drawing tables. The display area may be a room wall with a tacking surface or minimum 32 square feet of display panels.

7. Provide 15 square feet of floor area for an etching press for printmaking.

8. Provide space for a hinged or spring lock drying rack with mesh shelves for two-dimensional projects.

9. Provide floor area to accommodate eight 4 feet x 6 feet student worktables and one teacher demonstration table.

10. Provide locking glass display cases for exhibiting art work in the corridor that open from the studio room side. Cases should contain three adjustable glass shelves and have glass on both the corridor and room side.

11. The studio shall have two 4 foot high x 6 foot long white boards with marker trays. A tack strip with map hooks.

**b. General ceramic/sculpture requirements:**

1. Provide floor space for island or wall model combined sculpture and wedging station.

2. Allow 18 square feet of floor space for a clay slab roller.

3. Allow 15 square feet of floor space for eight potters' wheels. Provide electrical drop cords for their operation.

4. Provide a glazing spray booth with ventilation fan and hood and a turntable. Supply compressed air and electrical power to operate spray gun.

5. Provide floor space for glazing buckets and clay carts.

6. Provide 8 square feet of floor space and a dust collection ventilation system for a stand or bench mounted buffer/grinder for use in ceramics and jewelry making.

**c. General jewelry/sculpture requirements:**

1. Provide counter space for knee openings for four 24 inch deep x 30 inch wide jewelry soldering stations. Counter top shall be hard firebrick and have safety dividers between each station. Provide a natural gas manifold system with a central oxygen tank, counter height slot hood ventilation system and exhaust fan for stations.

2. Provide a locked screen wire cage for storage of mild acids used to clean metals.

3. Provide, in a room corner, a centrifugal casting well and exhaust hood to accommodate a centrifugal casting machine.

4. Provide floor/work space for the following equipment:

   a. Nine square feet for a band saw.

   b. Six square feet for a belt sander.

   c. Nine square feet each for three flexible-shaft grinders.

d. Eight square feet and exhaust hoods for burnout kilns. Adjacent floor base and wall material must be fireproof.

**d. General storage in studio:**

1. Provide eight sections of flat storage cabinets 38 inches wide x 26 inches deep x 84 inches high with six adjustable shelves for drawings and paintings.
2. Provide five sections of open steel shelving 48 inches wide x 36 inches deep x 84 inches high with five adjustable shelves.
3. Provide three sections of vertical flat storage with non-adjustable shelves spaced at 3 inches apart. Each unit should be 48 inches wide x 36 inches deep x 84 inches high, with two levels within each unit.
4. Provide a locking wardrobe cabinet 23 inches deep x 12 inches wide x 84 inches high for teacher personal items.
5. Provide approximately 16 lineal feet of 23 inch deep base cabinets with 12 inch deep upper cabinets or a combination of shelves and cabinets above.
6. Provide locking damp box storage for wet clay projects. Dimensions shall be 48 inches wide x 23 inches deep with six adjustable shelves and a 1 inch deep pan to absorb water.

**2. Teacher Work/Planning Area:**

a. Area (part of Studio) with space for teacher desk, large paper cutter and mat cutter.

**3. Resource Area:**

a. Area (part of Studio) with space for flat files and quiet work area.

**4. Kiln/Clay Storage:**

a. Provide 60 square feet of floor area and an exhaust system for each of two electric kilns.

b. Provide 220V dedicated circuit for a kiln and a 110V circuit for the kiln exhaust.

c. Supplemental ventilation/exhaust is required.

d. Provide floor space for four shelving units 24 inches deep x 36 inches wide x 84 inches high with adjustable, washable shelves for glaze ware, kiln furniture cabinet, green-ware cart and kiln shelf cart.

**5. Material Storage:**

a. This shall be a lockable room only accessible only from the Studio.

b. Provide built-in shelving:

1. Two 14 feet long x 84 inches high open shelf sections with eight adjustable shelves. One unit should be 42 inches deep; one unit should be 38 inches deep.
2. Provide some vertical slotted storage for poster board.

c. Provide floor space for:

1. 18 square feet for paper cutter on casters and work space.
2. 18 square feet for mat cutter on casters and work space.
3. 18 square feet for etching press and work space.
4. Two metal flat file units with metal work top 54 inches wide x 42 inches deep staked one on top of the other.

5. Two locking metal cabinets 36 inches square for flammable material storage.

d. Provide wall attached open steel shelving units 18 or 24 inches deep x 84 inches high for general art storage.

**6. Exterior Art Area:**

a. Provide an outdoor hard-surfaced multi-use area adjacent to the art studio for student use. This area need only be accessible by an exterior door from the Studio.

## SQUARE FEET SUMMARY:

**A. Art Education Spaces:**

| | | |
|---|---|---|
| 1. Studio | | _____ sf |
| 2. Teacher Work/Planning Area | 75 incl. in Studio | |
| 3. Resource Area | 75 incl. in Studio | |
| 4. Kiln/Clay Storage | | _____ |
| 5. Material Storage | | _____ |
| **Art Education Spaces Total** | | _____ |
| **B. Exterior Art Area:** | | _____ **sf** |

# MUSIC

## SPACE DESCRIPTION:

Music students engage in creative, high noise level activities. Music activities involve students in groups of varying sizes from large groups to solo activities. Acoustical considerations in this area are of prime importance.

Instrument storage is provided for security purposes and for the protection of instruments that, if damaged, are costly to repair or replace.

**A. Music Spaces:**

1. General Requirements
2. Vocal Music
3. Instrumental Music
4. Instrumental Music Storage Room
5. Practice/Solo Rooms
6. Offices

## DESIGN CRITERIA:

All areas shall be ADA compliant.

**A. Music Spaces:**

**1. General Requirements:**

a. Acoustic treatment should be provided which creates an appropriate reverberant environment for both vocal and instrumental music. Ceiling heights of 12 to 14 feet are preferred. Reflective parallel surfaces should be avoided and the ceiling treatment should alternate reflective and absorbent surfaces to allow sound to blend and to keep average noise levels below OSHA guidelines. The ambient sound of the mechanical system should not exceed a preferred noise criteria rating of 25. Design and construction should maximize acoustical isolation of music activities from surrounding areas.

b. Provide a uniform light level without glare. Windows are not recommended.

**2. Vocal Music:**

a. Provide 20 square feet of floor space per vocalist.

b. Provide adequate storage for portable risers. Risers are positioned at the rear of the room in order for sound mixing to take place in front of the vocalists and for movement and choreography rehearsal. A piano will also be placed in front of the vocalists.

c. Provide adequate storage and shelving to accommodate100 – 9 inch x 11 ½ inch music folios, guitars, sheet music, books, records and tapes, and general storage.

d. Provide a drinking fountain within the room.

e. A maximum mid-frequency reverberation time of 1.5 to 2 seconds is recommended.

f. The lighting system should provide 50 foot candles maintained at 36 inches above the floor.

g. A sound amplification system, independent of a public address system is required.

**3. Instrumental Music:**

a. Provide 30 square feet of floor space for each instrumentalist.

b. The room may be designed with a flat floor or a three-tiered floor. Tiered floors are expensive to construct and cannot be reconfigured. If a tiered floor is designed, tiers should not be constructed of concrete. The top riser at the back of the room should be a minimum of 120 inches deep; the remaining two other levels should be a minimum of 60 inches deep. The elevation between riser levels should be 6 to 8 inches.

c. Musical instrument storage is required to accommodate a minimum of 100 instruments within the instrumental music room and the storage room. Miscellaneous storage is required for sheet music, tapes, CD's, DVD's and reference books. Provide in-room storage cabinets with locks 42 inch maximum depth x 62 inches wide x 84 inches high with doors that open no more than 90 degrees. Shelving within cabinets should have a protective edge to avoid damage from instrument cases.

d. Provide a drinking fountain and deep sink with gooseneck faucet and blade handles with hot and cold water for cleaning instruments.

e. A maximum mid-frequency reverberation time of 0.8 to 1.2 seconds is recommended.

f. Dual level lighting is recommended to provide a low level of 50 foot candles maintained at 36 inches above the floor and a high level of 100 foot candles maintained.

**4. Instrumental Music Storage Room:**

a. Locate the storage room to provide efficient circulation and minimize moving of instruments.

b. Provide storage cabinets and shelving for a variety of instrument and equipment types. Shelving should accommodate 100 concert size music folios 12 inches x 14 ½ inches.

**5. Practice/Solo Rooms:**

a. One 50 square foot solo practice room and one 100 square foot ensemble practice room are required.

b. Locate the practice rooms between vocal and instrumental music rooms.

c. Practice rooms must be sound isolated from other rooms.

d. Provide view windows in the walls for supervision.

**6. Offices:**

a. Provide one office for vocal music and one office for instrumental music. Each office should be 100 square feet. Provide daylighting in these offices.

## SQUARE FEET SUMMARY:

### A. Music Spaces:

1. General Requirements _____ sf
2. Vocal Music _____
3. Instrumental Music _____
4. Instrumental Music Storage _____
5. Practice/Solo Rooms 1@50, 1@100 _____
6. Offices 2@100 _____

**Music Spaces Total _____ sf**

# MULTI-PURPOSE SHOP/LABORATORY

## SPACE DESCRIPTION:

There should be two types of Multi-Purpose Shop/Laboratories: One will be a Technology Shop/Laboratory and one will be a Fabrication Shop/Laboratory. These spaces will be adjacent to the Computer Laboratory.

Technology Shop/Laboratory: Technology Education is defined as the "application of human knowledge." This space is a hands-on activity based instructional area and is student centered. Projects will be designed and engineered in this space. This space, while not a computer lab, should be well equipped with computers and modular workstations. Computers will be used as tools for the facilitation of learning in many technical areas of the students' individual interests.

Fabrication Shop/Laboratory: This space will be a dirty room. Fabrication may consist of construction and industrial type assembly of projects designed and engineered in the Technology Shop/Laboratory.

**A. Multi-Purpose Shop/Laboratory Spaces:**

1. Technology Shop/Laboratory
2. Fabrication Shop/Laboratory
3. Storage

## DESIGN CRITERIA:

Provide daylighting in both shop areas with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

**A. Multi-Purpose Shop/Laboratory Spaces:**

**1. Technology Shop/Laboratory:**

a. The actual use and design of this space will vary with the specific programs of each School District.

b. Location shall be adjacent to the Computer Laboratory and the Fabrication Shop/Laboratory.

c. The space should be accessible to service vehicles and have service entrances and exits adjacent to driveways. This will facilitate the delivery of supplies and equipment and for use after normal school hours.

d. Ceiling height should be a minimum of 12 feet with 14 feet preferred.

e. All areas of the laboratory should be visible to the instructor to ensure maximum supervision of work and safety.

f. Allow enough space between workstations and equipment for free flow of traffic and maintenance of equipment.

g. Wet areas may be required by the specific instructional program.

h. Electrical requirements will be dependent upon the type of equipment needed for the specific instructional program.

**2. Fabrication Shop/Laboratory:**

a. The actual use and design of this space will vary with the specific programs of each School District.

b. Location shall be adjacent to the Computer Laboratory and the Technology Shop/Laboratory.

c. The space should be accessible to service vehicles and have service entrances and exits adjacent to driveways. This will facilitate the delivery of supplies, materials and equipment. The space may be used after normal school hours.

d. Ceiling height should be a minimum of 12 feet with 14 feet preferred.

e. Allow enough space between workstations and equipment for free flow of traffic and maintenance of equipment.

f. The space shall be equipped with exhaust systems and dust collection and disposal systems to accommodate the particular equipment being used by the specific instructional program.

g. Wet areas may be required by the specific instructional program.

h. Electrical requirements will be dependent upon the type of equipment needed for the specific instructional program.

**3. Storage:**

a. This space must be located for convenient access to both of the Shop/Laboratories and for the delivery of supplies and materials.

b. Design space for maximum wall storage area.

## SQUARE FEET SUMMARY:

**A. Multi-Purpose Shop/Laboratory Spaces:**

| | |
|---|---|
| 1. Technology Shop/Laboratory | _____ sf |
| 2. Fabrication Shop/Laboratory | _____ |
| 3. Storage | _____ |
| **Multi-Purpose Shop/Laboratory Spaces Total** | **_____ SF** |

# COMPUTER LABORATORY

## SPACE DESCRIPTION:

The Computer Laboratory should provide a learning environment that reflects the image of a professional technology oriented workplace. Learning modules may include units in electricity, electronics, energy/power mechanics, applied physics, research and design, graphic communications, computer problem solving, flight technology, rocketry and space technology, transportation, robotics and automation, desk top publishing, audio broadcasting, engineering structures, computer graphics/animation and computer applications.

This space should be designed for flexibility for future room and equipment reconfigurations. The use of built-in work modules is discouraged because of its lack of flexibility.

Locate adjacent to the Multi-Purpose Shop/Lab spaces.

**A. Computer Laboratory Space:**

1. General Requirements
2. Electrical Requirements

## DESIGN CRITERIA:

All areas shall be ADA compliant.

**A. Computer Laboratory Space:**

**1. General Requirements:**

a. Provide work modules or room space for work modules for _____ students working in groups of two. Counter depth should be determined by the space required for the equipment to be used at each module. Provide shelving for videotapes, headphones, supplies and student notebooks for each module. Work module wall heights should not be higher than 54 inches to permit visual supervision by teachers.

b. Provide space for a teacher station in the middle of the work module area.

c. Provide open storage for:

1. Safety equipment
2. Heavy-duty shelves in sections to accommodate 32 notebooks each.
3. Reference books and materials, videotapes and computer discs.

d. All aisles around work modules should be a minimum of 48 inches wide.

e. Provide acoustic treatments that minimize noise levels.

f. Provide natural and artificial light. Light levels should be uniform and provide illumination levels consistent with safe equipment operation. Windows sill heights should not be lower than 48 inches above the floor. At least one window sash should be operable with screens provided. Blinds should be provided on all view windows.

g. Provide an eye wash station with drain and a drinking fountain.

h. Casework should consist of 12 to 14 lineal feet of base and upper storage cabinets. Provide one 23 inch deep x 12 inch wide x 84 inch high locking wardrobe cabinet for teacher coats and personal items. Provide a deep stainless steel sink with gooseneck faucet, blade handles and hot and cold water.

i. Provide white boards with marker rails and tack boards.

**2. Electrical Requirements:**

a. Coordinate location of 120 volt single phase and 208 volt three phase convenience receptacles.

b. Provide electrical distribution via overhead drop cords as needed for modules. Provide one 120 volt duplex receptacle every eight feet of wall length or a continuous plug mold. Locate receptacles and plug molds 42 inches above the floor. The start switch for each piece of equipment should be placed within easy reach of the operator and should be a magnetic switch.

c. Provide approximately 40% reserve capacity for future equipment.

d. Locate room light control switches in the room to be easily accessible to teachers. Provide a master switch near the teaching station to control receptacles for all computers and the TV/VCR. Provide lighting levels of 50 foot candles maintained at 36 inches above the floor.

## SQUARE FEET SUMMARY:

**A. Computer Laboratory Space:**

| | |
|---|---|
| Computer Laboratory | _____ sf |
| **Computer Laboratory Spaces Total** | **_____ SF** |

# MEDIA CENTER

## SPACE DESCRIPTION:

The Media Center is an integral part of the school instructional program and serves as an extension to each classroom. The Media Center provides space for learning resources, for use of audio/visual and computer equipment, and for support services required to assist students in achieving educational goals.

Architects must recognize that the Media Center is a specialized teaching space for young adults and must work closely with the Media Center Specialist to become familiar with how the space will be used.

**A. Instructional Component of Media Center Spaces:**
1. Student use area with stacks
2. Student media production center

**B. Support Component of Media Center Spaces:**
1. Circulation
2. Processing/learning resources
3. Media production/workroom
4. Equipment room
5. Periodicals
6. Office
7. Conference/Small group

## DESIGN CRITERIA:

The Media Center should be centrally located and easily accessible to students, teachers and visitors. The design should provide maximum flexibility in order to serve the needs of students and staff, accommodate program priorities, information expansion and changing technologies.

Minimum ceiling height shall be 12'-0" in the main room and 9'-4" in the support areas. Windows are recommended in the main media center room, but not recommended for electronic equipment rooms.

Provide daylighting in all areas, except storage rooms and media production center, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

**A. Instructional Component of Media Center Spaces:**

**1. Student use area with stacks:**

**a. Entrance:**

The main entrance should consist of double doors and be open and inviting with wall and floor area available for both informal displays and for locking display cases. A secondary entrance may be required. Sidelights beside doors should not be less than 18 inches above the floor. Provide built-in sliding glass door cases with three adjustable glass shelves and display lighting near the main entrance. Cases should be open on both

sides to be visible from inside and outside the Media Center. Provide a book drop location from the main corridor near the entrance. An entrance/security system is required.

**b. Instructional area:**

Provide area for seating of 10% of the student body. For example a middle school with_____students would require _____ students with seating at tables for two classes of _____ students each. Provide area for seating for _____ additional students in casual reading areas. The two class size areas should be considered teaching stations with appropriate voice, data, televisions, white boards and tack boards. In one of the two class areas provide a ceiling mounted power projection screen.

**c. Workstations:**

Include space for ten computer workstations that will accommodate the library catalog as well as other databases used for reference and research. The workstations may be arranged in one central area or spread throughout the room. Provide appropriate electrical, voice and data outlet locations to support the design. For planning purposes use nine square feet per workstation. Workstations shall accommodate both stand up and sit down students and at least two workstations shall be wheelchair accessible.

**d. Shelving:**

Provide shelving to accommodate a 10,000 – 12,000 volume collection of print material, including fiction, non-fiction, reference, magazines and newspapers. The shelving should be predominantly perimeter shelving with some interior island shelving. A range should no more than 72 inches high and have five shelves at least 14 inches high. A 36 inch wide shelf in a range should hold 25 volumes; a range of five shelves would hold 125 volumes. Some interior shelving of three shelves each and no higher than 48 inches may be used.

The design consultant is responsible for providing a furniture plan for the Media Center and insuring that the design provides for all of the Media Center features listed and for coordinating voice, data power and lighting locations. Logical circulation should be considered early in the design. Too many entries into the space bisect available floor area and make visual control difficult. Maintain 60 inches minimum clearance between furniture and shelving in traffic areas and 30 inches aisle width between stacks.

**e. Copying:**

Provide room in the student area for at least one copier for student use.

**2. Student media production center:**

a. Provide a room for the following activities: student broadcasting, use of scanners, digital cameras, poster makers, video cameras and video editors and six computer workstations. The room should support the activities of up to _____ students. Provide a closet and/or millwork with locking doors adequate to house props and equipment.

b. Dual level lighting is required to provide both 50 and 20 foot candles. Provide one track of 8 feet length with 3 adjustable spotlights on a separate circuit with switches.

c. Provide windows to the Media Center main room for visibility and supervision. Sill heights should not be less than 36 inches above the floor.

d. Ceiling height should be a minimum of 9'-4" to provide sufficient space for ceiling hung spotlights.

e. Provide for two video runs, one for all school broadcasting and one for the CATV connection. Provide power and data drops for operation of cameras, production lighting, for computer workstations, three printers and three scanners.

f. Provide 15-20 lineal feet of work counter, 34 inches high x 24 inches deep, with base cabinets below and 12 inch deep upper cabinets above for storage.

**General Media Center Open Area Requirements:**

**1. Windows and/or skylights:**

Windows and/or skylights shall be used for daylighting the space, blinds and blackout capability is required.

**2. Acoustical Considerations:**

Minimize reverberation to avoid disturbance caused by multiple simultaneous activities. Do not use angled or vaulted ceilings without acoustical absorptive materials on all angled surfaces.

**3. Lighting:**

A 50 foot candle minimum should be provided at each reading station. Separate lighting control is required for each of the activity space as well as for display cases. The use of daylighting is encouraged for a substantial amount of the lighting requirements.

**4. HVAC System:**

The HVAC system should be separately zoned from those parts of the building that are not mechanically conditioned year-round. Special attention must be given to adequate ventilation and humidity control to prevent mold and mildew year-round. Computer hardware and software must be protected from temperature and humidity extremes.

**B. Support Component of Media Center Spaces:**

**1. Circulation:**

a. Provide space for check in/out of learning resources such as books, textbooks, audio/visual materials and equipment and space for circulation related tasks such as computing, filing, record keeping and security encoding devices.

b. The circulation desk and rear counter should be designed as a practical, functional piece of casework. Similarly, the circulation desk should be treated as a long-term investment that is not custom designed around one person's immediate needs but rather the needs of numerous individuals who will work at the desk in the future. Desks that are deeper than 30 inches may inhibit students reaching for materials being handed to them. Semi-circular desks generally waste too much space behind the desk, sacrificing floor space for student use. If stand-up transaction tops are

used in front of the circulation desk, the top should be 10 to 12 inches deep so that books and other items can be placed on the top.

**2. Processing/learning resources:**

a. This room provides central storage and retrieval for books and learning resources including audio/visual and non-print materials. Other curriculum materials such as social studies kits, globes and oversized materials such as flat and roller-type maps, posters, charts will also be stored.

b. Wall shelving is required near the workstation for processing, repair and reserve of learning resources.

c. Base cabinets: Provide 30 inch high counter space for computer workstation and space for storage of materials and an optional 34 inch high counter space for preview of materials and for additional workstations for aides and volunteers.

d. Wall cabinets: Optional.

e. Specialized storage for flat maps and charts: Provide large shelves, vertical slot shelving and cubbyhole storage for rolled charts, maps and posters. Provide pegboard hooks for storage of roller-type maps.

f. Fixed equipment: Provide floor space for a high-density shelving system to accommodate storage of various types of print and non-print media.

**3. Media production/workroom:**

a. Provide a work area to prepare library media and textbook learning resources for inclusion into the Media Center collection and preview, reserve, return and repair of audio/visual materials. The room is used as a work area for Media Center personnel, staff and students performing tasks such as copying, collating, publishing, dry mounting and laminating.

b. Equipment may include a computer station, printer, copy machine, paper cutter, letter die cutter and bookbinding machines. A 220V copy machine requiring a dedicated 20 amp circuit may be located in this area. This copier requires floor space approximately 4 feet x 7 feet.

c. Base cabinets: Must accommodate 30 inch high sit-down workstations with drawers and a 34 inch high peninsula or work island with drawers. Vertical slot storage for poster board is also required. Provide work sink.

d. Wall cabinets: Provide above workstations and equipment counters.

e. Shelving: 20 lineal feet of adjustable shelving.

**4. Equipment room:**

a. This room provides storage and retrieval for large equipment items such as VCR's, monitors, and computers as well as small items such as tape recorders, CD/DVD players, microphones and digital cameras. Supplies such as bulbs, cords, and headphones are also stored.

b. The space accommodates minor equipment repair and maintenance functions and provides a holding area for pickup and delivery of equipment needing repair. Provide a small workbench with overhead lighting and electrical receptacles.

c. Provide direct access to the circulation desk and the main corridor. A rectangular room configuration is preferred.

d. Base cabinets: 34 inch high counter/work surface.

e. Wall cabinets: Full height units with shelves and doors.
f. Adjustable shelving: Open and sturdy with varying depths.

5. **Periodicals:**
   a. Provide an area for storage and retrieval of periodicals and software.
6. **Office:**
   a. Provide an office to accommodate a desk with a computer station and floor space to accommodate storage cabinets, bookshelves and a wardrobe unit.
   b. Provide windows into the Media Center for supervision. Window sill heights should not be less than 36 inches above the floor.
7. **Conference/small group:**
   a. The room shall be able to accommodate a conference table and chairs for small group meetings and student work space.

## SQUARE FEET SUMMARY:

**A. Instructional Component of Media Center Spaces:**

| | |
|---|---|
| 1. Student use area with stacks | _____ sf |
| 2. Student media production center | _____ |
| | _____ |
| **Sub-Total of Instructional Components** | _____ **SF** |

**B. Support Component of Media Center Spaces:**

| | |
|---|---|
| 1. Circulation | _____ sf |
| 2. Processing/learning resources | _____ |
| 3. Media production/workroom | _____ |
| 4. Equipment room | _____ |
| 5. Periodicals | _____ |
| 6. Office | _____ |
| 7. Conference/Small group | _____ |
| Sub-Total of Support Components | _____ SF |
| **Media Center Spaces Total** | _____ **SF** |

# PHYSICAL EDUCATION

## SPACE DESCRIPTION:

The Physical Education area provides opportunities for a variety of physical activities for the entire student population. The size of area will be determined by the size of the student body and programs offered.

**A. Physical Education Spaces:**

1. Gymnasium
2. Equipment Storage
3. Fitness Room
4. Girls Locker/Shower/Toilet Room with Teacher/Coach Office
5. Boys Locker/Shower/Toilet Room with Teacher/Coach Office
6. Physical Education Courts, Fields and Events Areas

## DESIGN CRITERIA:

Provide daylighting in the Gym and Fitness Room. All areas shall be ADA compliant.

**A. Physical Education Spaces:**

**1. Gymnasium:**

a. Minimum interior dimensions shall be 86'-0" x 100'-0" with a 25'-0" ceiling height.

b. Walls and floors should be flat, straight, smooth and easy to clean, with no protrusions.

c. Provide bleachers that roll out from one wall to seat 400 people. Equip the bleachers with an attached scorekeeper/timer bench.

d. Provide an electrically operated net drop to divide the gym in half. Provide access from both ends of the net drop to facilitate movement from one activity area to the other.

e. Provide rough-in for a scoreboard with central console and automatic time out clock. The console should be connected by an extension cable to a receptacle in the wall behind the bleachers. Locate the scoreboard to be visible to both spectators and the scorekeeper.

f. Provide a public address system that will interface with the paging system.

g. Provide the following:

1. 28 floor inserts for gym equipment.
2. Three sets of safety suspension systems with hoists.
3. Six electrically operated swing-up basketball goals. Crash pads should be wall-mounted behind all goals.

h. Acoustics should be addressed through the use of acoustic metal deck and acoustically perforated CMU walls or sound absorbing panels. Sound absorbing panels should be impact resistant.

c. Metal switch and receptacle cover plates and locking metal covers on all light switches, basketball goal and net drop raising switches are required.

**2. Equipment Storage:**

a. The room must be directly accessible from double doors from the gymnasium to facilitate movement of large apparatus and team sports equipment. Open structure ceiling are recommended.

b. Provide shelving that is appropriate to the type of equipment to be stored. Locking metal equipment cages may be provided if needed.

c. The remainder of the room area should be open to allow for large equipment storage.

**3. Fitness Room:**

a. Locate the room adjacent to the gymnasium with access from a pair of doors to facilitate moving of equipment. A window providing good visibility from gym teacher offices is required.

b. Ceiling height should be a minimum of 12'-0".

c. The recommended floor material is an interlocking rubber mat or similar resilient flooring.

d. Provide an 8'-0" high x 12'-0" wide wall mounted, non-breakable mirror.

**4. Girls Locker/Shower/Toilet Room with Teacher/Coach Office:**

a. Locker area:

1. Provide an appropriate number of 12 inch wide x 12 inch deep x 18 inch high P.E. lockers with built-in locks.
2. Provide an appropriate number of 15 inch wide x 15 inch deep x 36 inch high athletic lockers with built-in locks.
3. Provide bench seating between locker banks.
4. Provide wall mounted hair dryers, a non-breakable mirror and one drinking fountain.

b. Shower area:

1. The shower area should be located adjacent to the locker area with good traffic flow. This area should be separated from the locker room with at least a 5'-0" high visual barrier.
2. Provide private shower stalls with dressing area, one of which is handicapped accessible.
3. The showers shall be equipped with preset tempered water controls.

c. Toilet area:

1. Provide 3 water closets and 2 lavatories, with one water closet and lavatory handicapped accessible.

d. Teacher/Coach Office:

1. Provide an office between the gymnasium and the girls locker room with a door to the gym and a visually screened door to the locker room.
2. Provide a non-breakable window 42 inches above the floor into the gymnasium for supervision.
3. Provide a separate area adjoining the office for:
    a. Six 12 inch wide x 15 inch deep x 60 inch high lockers.
    b. Space for dressing and a handicapped accessible private shower, water closet and lavatory.

**5. Boys Locker/Shower/Toilet room with Teacher/Coach Office:**

a. Locker area:

1. Provide an appropriate number of 12 inch wide x 12 inch deep x 18 inch high P.E. lockers with built-in locks.
2. Provide an appropriate number of 15 inch wide x 15 inch deep x 36 inch high athletic lockers with built-in locks.
3. Provide bench seating between locker banks.
4. Provide wall mounted hair dryers, a non-breakable mirror and one drinking fountain.

b. Shower area:

1. The shower area should be located adjacent to the locker area with good traffic flow. This area should be separated from the locker room with at least a 5'-0" high visual barrier.
2. Provide private shower stalls with dressing area, one of which is handicapped accessible.
3. The showers shall be equipped with preset tempered water controls.

c. Toilet area:

1. Provide 3 urinals, 2 water closets and 2 lavatories with one of each handicapped accessible.

d. Teacher/Coach Office:

1. Provide an office between the gymnasium and the boys locker room with a door to the gym and a visually screened door to the locker room.
2. Provide a non-breakable window 42 inches above the floor into the gymnasium for supervision.
3. Provide a separate area adjoining the office for:
   a. Six12 inch wide x 15 inch deep x 60 inch high lockers.
   b. Space for dressing and a handicapped accessible private shower, water closet and lavatory.

**8. Physical Education Courts, Fields and Event Areas:**

The outside Physical Education facilities, which are an integral part of the entire Physical Education program, are contained in a separate document.

# SQUARE FEET SUMMARY:

**A. Physical Education Spaces:**

| | |
|---|---|
| 1. Gymnasium | _____ sf |
| 2. Equipment Storage | _____ |
| 3. Fitness Room | _____ |
| 4. Girls Locker/Shower/Toilet Room w/ Office | _____ |
| 5. Boys Locker/Shower/Toilet Room w/ Office | _____ |
| 6. P.E. Courts, Fields and Event Areas | _____ |
| **Physical Education Spaces Total** | **_____ SF** |

# COMMONS/CAFETERIA

## SPACE DESCRIPTION:

The Commons/Cafeteria is a multi-use room that combines the cafeteria seating area for food service operations with auditorium performance features. Activities that take place in the room in addition to cafeteria functions are performing arts programs, musical programs, student assemblies, large group lectures, instructional films and special programs presented after school hours.

**A: Commons/Cafeteria Spaces:**

1. Seating Area
2. Performance Platform
3. Dressing/Storage
4. Table and Chair Storage

## DESIGN CRITERIA:

Provide daylighting in the seating area space with a minimum of 20-30 fc of uniform daylighting throughout as the space. All areas must be ADA compliant.

**A. Commons/Cafeteria Spaces:**

**1. Seating Area:**

a. The Commons/Cafeteria should be designed to seat 300 persons at tables and chairs and for 600 persons in non-fixed seating for performances.

b. The minimum ceiling height should be 14'-0".

c. The space may be designed with or without a tiered floor. Tiers enhance sight lines to the performance platform for events; however, substantial additional construction cost is incurred and it reduces the flexibility of the space. If tiers are designed, provide four or five flat tiers to accommodate cafeteria tables and chairs.

d. Windows to the exterior are required. Minimum sill heights should not be lower than 24 inches above the floor. Provide blinds for darkening the space.

e. Acoustical treatment is required to produce low reverberation times and high sound absorption.

**2. Performance Platform:**

a. Provide a raised performance platform area to accommodate _____ students and a conductor in symphonic musical arrangements. The platform floor should be at the same level as adjacent corridor floors or ramps must be provided to facilitate moving of students and equipment.

b. Provide a 40 foot wide proscenium opening with tracks, stage curtains and cyclorama curtains. Sufficient space should be provided in front of the proscenium opening to accommodate "off-stage" activities such as singing or music groups supporting a "stage" activity.

c. The lighting system should include a basic color range, spotlights, light controls and a dimmer system. Light controls should be located in the rear of the audience area.

d. A high fidelity sound system should contain jacks and speakers appropriate for staging Middle School productions.

e. Door locations and widths should facilitate movement of groups and equipment, including a grand piano, on and off the platform.

**3. Dressing/Storage:**

a. Locate dressing and storage rooms adjacent to the performance platform. These shall be two separate rooms with 100 square feet for dressing and 300 square feet for storage.

b. Dressing: Provide a sink with hot and cold water and a make-up counter with mirror and make-up lighting.

c. Storage: Provide storage for stagecraft materials, supplies and costumes. Provide large double doors for easy movement of sets and props onto the platform.

**4. Table and Chair Storage:**

a. Provide storage adjacent to the Commons/Cafeteria for storage of tables and chairs. This room should accommodate the storage of all tables and chairs to be used in the space.

b. Provide large double doors for ease of movement of tables and chairs.

## SQUARE FEET SUMMARY:

**A. Commons/Cafeteria Spaces:**

1. Seating Area _____ sf
2. Performance Platform _____
3. Dressing/Storage ___ @ ___ sf; ___ @ ___ sf _____
4. Table and Chair Storage _____

**Commons/Cafeteria Spaces Total _____ SF**

# KITCHEN

## SPACE DESCRIPTION:

The kitchen, providing space for personnel, delivery, storage, preparation, serving and cleanup of school food services, may contain the following components:

**A. Kitchen Spaces:**

1. Receiving Area
2. Dry Storage
3. Cooler/Freezer
4. Management Area
5. Preparation Kitchen Area
6. Serving Kitchen Area
7. Dishwashing
8. Locker/Toilet Room
9. Custodial/Laundry Room

## DESIGN CRITERIA:

The size and configuration of the kitchen may vary and shall be determined by the School District for the facility that it serves. All areas shall be ADA compliant.

**A. Kitchen Spaces:**

Locate the kitchen contiguous with the cafeteria. Provide a loading dock with ramp and unobstructed outside access from the service drive. The ceiling height should be a minimum of 10'-0". Acoustical sound isolation is required between the kitchen and cafeteria as well as instructional areas.

## SQUARE FEET SUMMARY:

**Kitchen Spaces Total** **_____ SF**

# CIRCULATION

## SPACE DESCRIPTION:

The design and materials selected should result in circulation spaces that are durable, easily maintained, attractive, warm and non-institutional in appearance. Circulation spaces should be direct, simple and logical as a way-finding system into and through the building. All circulation spaces should use at least 50% daylighting for illumination.

**A. Circulation Spaces:**

1. Entries
2. Lobby
3. Corridors

## DESIGN CRITERIA:

**A. Circulation Spaces:**

**1. Entries:**

a. Entries should be well defined from the exterior.

b. If there are separate bus rider entries and automobile rider entries they should be readily identifiable as such.

c. Vestibules are required at high use entrances and exits.

d. Floors at all entries should have walk-off mats/carpet.

e. Walls should be constructed of durable materials, similar to exterior materials.

f. Ceiling heights shall be a minimum of 10'-0".

**2. Lobby:**

a. The floor material should be hard surfaces.

b. Provide a built-in lighted display case in the main lobby.

c. Ceiling height shall be a minimum of 10'-0".

d. The main lobby shall be adjacent to the Administration area.

e. Public Access: Provide lockable security separations to isolate the building areas that may be used after school hours by the public, such as the gymnasium, music, commons/cafeteria and media center.

f. Signage: Provide directional signs to the main areas of the building. Provide a dedication plaque. All signage shall be ADA compliant.

**3. Corridors:**

a. Floors: Either resilient flooring or carpet.

b. Walls: The preferred corridor wall is a 48 inch high durable surface wainscot with gypsum board walls above finished with a heavy mil thickness paint. The wall finish will be high impact gypsum board on the lower 48 inches with the remainder of the wall standard gypsum board with a heavy mil thickness paint. All exterior corners of gypsum board will have full height high-impact corner guards.

c. Ceilings: Ceiling height shall be a minimum of 9'-4".

d. Acoustics: Minimize reverberation times to avoid disturbance caused by multiple simultaneous activities.

e. Doors opening into corridors shall be recessed. Recognizing that staff and students often prefer open corridor doors, use electromagnetic hold open devices to maintain the integrity of the exit system.
f. Provide 200 to 300 square feet of tack boards at 3 or 4 locations in the main corridors. Optional use of tack strips at various mounting heights for display.
g. Signage: Provide room name, number and replaceable teacher name plaques at each doorway. All signage shall be ADA compliant.
h. Electrical Power: Provide 110V general use duplex receptacles at 50 feet minimum spacing throughout the corridor system.
i. Lighting: Corridor lighting, as a supplement to daylighting, shall be 20 foot candles at 36 inches above the floor minimum.
j. Corridor Widths: Corridors that are narrow and congested result in excessive noise, improper student behavior and increased maintenance costs. Minimum corridor widths are:

1. Serving more than two classrooms 8'-0"
2. Serving more than ten classrooms 9'-0"
3. Main corridors 10'-0"
4. Lockers along one wall add 2'-0"
5. Lockers along two walls add 3'-0"

# CUSTODIAL

## SPACE DESCRIPTION:

Custodial support areas are required for the proper maintenance and operation of the facility.

**A. Custodial Spaces:**

1. Facility Manager Office
2. Custodial Closets
3. Custodial Storage Room

## DESIGN CRITERIA:

**A. Custodial Spaces:**

**1. Facility Manager Office:**

a. This space is a combination office and receiving and space which should be located close to the service entrance for receiving.

b. The roof access hatch with built-in vertical ladder should be located in this space.

c. Provide general lighting, power, data and a telephone.

**2. Custodial Closets:**

a. Provide one per instructional suite.

b. Provide one for the area that includes the gymnasium, commons/cafeteria and core areas if located more than 200 feet form instructional area.

c. Provide one for the kitchen.

d. Provide in each custodial closet:

1. One floor mounted 24 inch x 24 inch service sink with a maximum 6 inch high lip and heavy-duty braced faucet with hot and cold water.
2. 48 inch high wainscot of FRP around service sink.
3. 20 lineal feet of 12 inch deep heavy duty adjustable shelving.
4. Mop holder.

**3. Custodial Storage Room:**

a. Provide space to store indoor floor cleaning equipment such as extractors, vacuum cleaners, buffers and floor machines.

b. Electrical transformers, panels and sub-panels are not to be located in custodial closets or storage rooms.

c. The room is intended to keep equipment and supplies from being stored in electrical, mechanical and communications rooms.

# MECHANICAL, ELECTRICAL AND COMMUNICATIONS ROOMS

## DESIGN CRITERIA:

### A. Mechanical and Electrical Rooms:

1. Rooms must be of adequate size to facilitate maintenance of equipment and movement of personnel during normal maintenance procedures.
2. Floors should be constructed at grade level.
3. Floor material should be painted concrete. Walls should be painted. Ceilings should be as required by the building code.
4. Direct exterior access should be through a pair of metal doors. The door opening size must permit passage of the largest piece of equipment and equipment maintenance items. Room access must also be provided from an internal corridor.
5. Acoustical isolation and sound attenuation from adjacent rooms and areas is a critical consideration in the location and design of mechanical and electrical rooms.
6. If access to the roof is needed in these rooms it may be by roof hatches and vertical ladders.
7. Provide at least one 110V general duplex receptacle in each space. Provide 30 foot candles of lighting at 36 inches above the floor maintained.

### B. Communications Rooms:

1. Each school is required to have a communications room to house all building special systems control equipment. When data cable-run lengths exceed 300 total lineal feet, the communications room must be connected to remote intermediate data closets. The equipment contained in this room is costly and environmentally sensitive, for this reason the room is not permitted to be used as a building storage room. Key access should be limited.
2. Locate the room centrally within the building and provide a door from the corridor.
3. Ceiling height should be a minimum of 10’-0”.
4. The floor may be either painted concrete or vinyl composition tile.
5. The wall finish should be ¾ inch nonflammable unpainted plywood.
6. Provide cooling for the room.
7. The room should be of adequate size to accommodate the equipment contained therein and room to maintain that equipment.

# PLUMBING

## SPACE DESCRIPTION OF PLUMBING SPACES:

**A. Plumbing Spaces:**

1. Instructional Area Student Toilets
2. Instructional Area Staff Toilets
3. Instructional Area Work Sinks
4. Core Area Public Toilets
5. Administrative Area and Staff Toilet
6. Nurse Area Toilet
7. Core Area Work Sinks
8. Drinking Fountains
9. Custodial Closets
10. Kitchen
11. Exterior Keyed Hose Bibs

## DESIGN CRITERIA:

**A. Plumbing Spaces:**

1. Instructional Area Student Toilets: For each instructional suite, provide one for each sex convenient to suite classrooms.

2. Instructional Area Staff Toilets: For each instructional suite, provide one unisex toilet convenient to the teacher planning/conference space.

3. Instructional Area Work Sinks: Provide as indicated in each instructional area section.

4. Core Area Public Toilets: Provide a minimum of one facility for each sex sized to accommodate more than one user at a time. Locate the toilets accessible to the gymnasium, commons/cafeteria and administration.

5. Administrative Area and Staff Toilet: Provide two single occupant toilets, one for men and one for women.

6. Nurse Area Toilet: Provide one unisex toilet with specialty shower and floor drain. See Administration section for further requirements.

7. Core Area Work Sinks: Provide sinks in each of the following areas: Nurse, Administration Workroom, Staff Lounge, Art room, Music room, and Media production/workroom. See specific section for further requirements.

8. Drinking Fountains: Provide two minimum in Core area. In Instructional Suites provide at least two outside the student toilets. Provide drinking fountains near the gymnasium, commons/cafeteria and administration.

9. Custodial Closets: Provide one floor mounted sink in each closet.

10. Kitchen: Provide a staff toilet, custodial closet with floor mounted sink and other plumbing as may be required per kitchen design.

11. Exterior Keyed Hose Bibs: Provide one at the kitchen service entrance. Provide others as may be needed.

**B. Additional Requirements:**

1. Ceilings: Lay-in grid ceilings are not recommended in the toilets, kitchen or custodial closets.
2. Doors: Student toilet designs may or may not have doors, School District option.
3. Acoustical Considerations: To the greatest extent possible provide acoustical separation between instructional areas and toilets, with special consideration for noise generated by electric hand dryers.
4. Instructional Area Student Toilets: Provide fixture ratios per the building code and plumbing code. Assume maximum building or instructional area capacity and assume 50% of each sex. Lavatory areas are permitted to have unisex configuration if separated from the water closets and urinals.
5. Core Area Public Toilets: Fixture ratios should be provided according to requirements of the building code and plumbing code. Design public toilets in conjunction with central student toilets to serve 50% of the maximum assembly occupancy of the commons/cafeteria per the building code. Assume a 50% ratio for each sex.
6. Drinking Fountains: Provide non-refrigerated fountains at the public toilets and near the student toilets in the instructional suites. Meet code fixture quantity requirements.
7. Provide supplemental exhaust for all toilets.

# TECHNOLOGY WIRING STANDARDS

## SPACE DESCRIPTION OF WIRING STANDARDS:

All buildings should be constructed to allow for the use of technology infrastructure by all students, faculty and staff. Infrastructure refers to connectivity issues and all necessary frameworks to implement technology.

The use of wireless technology is recommended. It increases the flexibility of the technology system and actually reduces the need for space. One case for this is the use of laptop computers in the classroom that have wireless connections to a contact box. In some cases this approach has removed the need for a "computer lab".

## DESIGN CRITERIA:

### A. General:

1. Wireless technology is recommended for use, at least, in the classrooms and Media Center. In lieu of wireless technology the standards shown below should be followed.
2. These Educational Specifications provide for design and construction of a Communications Room and the installation of video, voice and data receptacles, conduits and conduit stub-ups with the spaces listed below.
3. Infrastructure must meet industry standards such as those defined by EIA/TIA-568 Telecommunications Cabling Standards, EIA/TIA-569 Commercial Building Standard for Telecommunication Pathways and Spaces, and EIA/TIA-607 Commercial Building Grounding and Bonding requirements for telecommunications.
4. *If the infrastructure is not to be installed at the time of original construction, the capability to install these systems at a later date shall be provided.*
5. Ethernet/token ring hubs, work station cables and data patch cables should be installed to support the number of computers to be used plus a 20% growth factor at the time of installation. Additional hubs should be installed once the 20% growth factor is reached.
6. Data cabling shall be at least Category 5E.

### B. Video Standards:

1. Video Outlet Locations:
    a. One per classroom.
    b. Two in the Media Center.
    c. One in the gymnasium.
    d. Two in the commons/cafeteria.
    e. One in each teacher workroom.
    f. One in the administrative office.
    g. One in the Principal's office.
    h. One in the administrative conference room.

### C. Voice Standards:

1. Voice (telephone) Outlet Locations:
    a. One per classroom.

b. One in the Media Center.
c. One per Media Center office and production room.
d. Two per administrative office support staff.
e. One per fax machine.
f. One in gymnasium.
g. One in commons/cafeteria.
h. One per teacher workroom.
i. One per Principal or full time staff.
j. One per Special Program.
k. One in facility manager office.

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

**D. Data Standards:**

1. Data Outlet Locations:

a. Five per classroom. One data outlet should be located near or below the video outlet for use with video camera.
b. One per administrator and/or in each room in administrative area.
c. One in facility manager office.
d. Two in commons/cafeteria. Coordinate location of one with food service personnel. The other should be near or below video outlet for use with video camera.
e. Media Center:
    1. Two for circulation desk.
    2. One for Media Center Specialists office.
    3. Five locations within the Media Center.
    4. One for Computer Public Access Catalog.
f. One in gymnasium near or below video outlet for use with video camera.
g. Fifteen to twenty drops for Computer Laboratory.

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

**E. Temporary Building Wiring Requirements:**

1. One video outlet.
2. Three data outlets and three telephone located in same back box.
3. One wall telephone outlet located near entrance door.

# ELECTRICAL AND SPECIAL SYSTEMS

## DESIGN CRITERIA:

### A. Electrical System Voltages:

1. 480Y/277 volt systems (with transformers for 208Y/120 volt uses) should be provided when connected loads exceed 500 KVA. A cost analysis may warrant maintaining the existing voltage system with addition/renovation projects.
2. Disconnect switches are required for all motors, water heaters and large laundry equipment.

### B. Service Entrance:

1. The impact of the short circuit interrupting capacity of the electrical utility at the secondary terminals of its transformer must be used when designing service entrance equipment and panels. Consider placing this capacity on a plaque on the main panel board for future reference.
2. The use of spare conduits from the utility transformer to the main panel for future growth is recommended.

### C. Wiring Systems:

1. Copper conductors should be used for feeder circuits from the main panel to the sub-panels.

### D. Electrical Panels:

1. Verification should be made that the panels, conductors and the over-current protection for each are coordinated.
2. Disconnect switches are required for all motors, water heaters and large laundry equipment.

### E. Grounding:

1. The proper grounding electrode system should be included with the correct sizes for the grounding "electrode conductors". Connections to ground rods and a second grounding point are required, such as the building steel or metallic water piping in contact with the earth for at least a 10 foot length. This applies to service entrance panels and step-down transformers.
2. Bonding and grounding diagrams should be included.

### F. Illumination:

1. The use of daylighting is recommended to supplement the illumination systems in the building. This recommendation is not only for energy savings but daylighting research has shown that it actually increases the learning ability of the students.
2. Compact fluorescent fixtures should be installed where incandescent fixtures have been used traditionally for wall washing, display cases and down lighting in traffic patterns. Fluorescent lighting fixtures can be installed with equipment used in most desired applications for dimming, but where color rendition and brightness control may be critical, such as performance class settings incandescent spot lighting (track lights) may be used.

3. Incandescent fixtures should be avoided due to high operation costs and short lamp life.
4. The use of electronic ballasts and T-8 or T-5 fluorescent lamps in appropriate locations is strongly recommended.
5. Light-emitting diodes (LED) exit lighting fixtures are recommended because of their very long life and very low operating cost. Incandescent exit fixtures should be avoided. Location of exit and emergency lighting fixtures are critical.

**G. Energy Lighting Controls:**

1. The use of remote switches for lighting in corridors, toilets, gymnasiums and common areas is recommended. These switches should be located in areas accessible only to designated staff. Key-operated switches are a second choice.
2. The use of dual level switching and occupancy sensors is recommended.

**H. Audio Enhancement Systems:**

1. The system; consisting of a base unit, four speakers, and a wireless microphone; allows use of a hand free, wireless microphone to enhance voice projection. One unit is installed for each teaching station. The system provides the opportunity for all students to hear the teaching instructions whether they are hearing impaired or acoustical conditions of the teaching area do not allow for proper sound transmission.

**I. CATV:**

1. Cable TV should be installed throughout the school (See Technology Wiring Standards: B. Video Standards for locations.)
2. Cable television control equipment shall be located in the Communications Room.

**J. Central Energy Management Systems (CEMS):**

1. The CEMS monitors the heating, ventilating and air conditioning (HVAC) systems and reports status information to a central monitor location.
2. CEMS control equipment is located in the Communication Room.

**K. Clock System:**

1. School clocks should be on a master self-adjusting electrical system.
2. Locate the master control in the Communications Room.

**L. Data System:**

1. A computer network should be installed throughout the school. The preferred system is a wireless network.
2. Control equipment is located in the Communications Room.

**M. Fire Alarm System:**

1. A fire alarm system must be installed throughout the school. A fire alarm status panel must be located in the vicinity of the main entrance door.
2. Control equipment is located in the Communication room.
3. See applicable codes for required locations of fire alarm pull stations and horns.

4. Verify that enough horn/strobe lights are provided for sufficient coverage. Strobe lights are required in toilets.
5. Connect ductwork smoke detectors into the fire alarm system and design to shut down the air-handling units.
6. Provide connections for the kitchen fire extinguishing system to the fire alarm system and the shunt trip mechanisms to disconnect the cooking equipment and the kitchen hood fans.

**N. Security System:**

1. See Security.

**O. Public Address Systems:**

1. A sound amplification system will be provided in the Commons/Cafeteria and the Gymnasium.
2. The system consists of an amplifier, speakers, two wired microphones and two wireless microphones.
3. Locate operation controls in the Commons/Cafeteria performance area and the Gymnasium offices.

**P. Communications System:**

1. Thoughtful planning is required to accommodate sufficient numbers and proper locations of computers, telephones, TV, intercom/paging/radio and other integrated communications equipment.
2. For computers and other high-speed electronic equipment, the backbone can be fiber optic cables with "Category 5E" copper cables to the individual items of equipment.
3. Connection to the State Information Highway requires fiber optic cables.
4. Isolation transformers, surge suppression and lightning protection devices should be used to protect all electronic equipment and the panels to which they are connected.
5. Sufficient wire ways should be installed and located for ample expansion.
6. Cable tray over lay-in ceilings in corridors is the most common method of routing communications and computer cables. A wireless network is recommended for data transmission.
7. A programmable phone/paging system should be provided.
8. Communications control equipment is located in the Communications Room.
9. Classrooms should be equipped with a two-way communications system for informational and emergency use. Every classroom should be equipped with a telephone.

# SECURITY

## SPACE DESCRIPTION:

Refer to the School District Security Plan.

Other than door control, security systems in schools are not a preventative measure. They primarily fulfill a monitoring and annunciation function.

Three methods for creating secure areas are: architectural design, electronic systems and manpower.

## DESIGN CRITERIA:

**A. Architectural Design:**

1. Ensure clear sight lines around the building. (See Site Development documents.)
2. Position Administration adjacent to the main entrance with a security interlock vestibule.
3. Position areas frequented by staff throughout the building.
4. Provide reasons for staff to be seen in the corridors.
5. Eliminate secluded areas.
6. Limit the number of entry points to the building.
7. Design open, visible, bright areas.

**B. Electronic systems:**

1. Provide electronic access control at all entrance doors, either card readers of phob ID system.
2. Provide door monitoring system on all exterior doors.
3. Provide CCTV surveillance system with cameras located at the following areas: a) parking lot(s), b) main entrance, playgrounds close to buildings and d) main corridors.
4. Building annunciation system (See Electrical and Special Systems, P.)

**C. Manpower:**

1. No piece of technology or building design can replace the eyes and ears of school staff out and about interacting with students.
2. Position Administration adjacent to the main entrance with a security interlock vestibule. The front desk shall be occupied at all times.
3. Position areas frequented by staff throughout the building and train them on security measures.
4. Provide reasons for staff to be seen in the corridors.

# SUMMARY

## MIDDLE SCHOOL EDUCATIONAL SPECIFICATIONS FOR _____ STUDENT CAPACITY

_____students X _____ sf/student = _____sf

| | |
|---|---|
| ADMINISTRATION | _____ sf |
| INSTRUCTIONAL SUITES | _____ |
| ART EDUCATION | _____ |
| MUSIC | _____ |
| MULTI-PURPOSE SHOP/LABORATORY | _____ |
| COMPUTER LABORATORY | _____ |
| MEDIA CENTER | _____ |
| PHYSICAL EDUCATION | _____ |
| COMMONS/CAFETERIA | _____ |
| KITCHEN | _____ |
| **NET SQUARE FEET TOTAL** | **_____ SF** |
| NET TO GROSS RATIO (0.37) | _____ |
| **GROSS SQUARE FEET TOTAL** | **_____ SF** |

# APPENDIX